

Natural Resources and Environmental Issues

Volume 5 *Ecosystem Management of Natural Resources in the Intermountain West*

Article 10

1995

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Recommended Citation

Wilcox, Louisa (1995) "Greater Yellowstone ecosystem case study," *Natural Resources and Environmental Issues*: Vol. 5 , Article 10.

Available at: <https://digitalcommons.usu.edu/nrei/vol5/iss1/10>

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The Greater Yellowstone Ecosystem

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Abstract

Jurisdictional boundaries are artificial limits imposed on natural areas. The Greater Yellowstone Coalition (GYC), comprised of 100 conservation groups and 5,000 members, has assumed the role of addressing the many, complex problems created by these limits. Of particular concern has been private land development and agency inertia in protecting one of the last, more or less intact ecosystems in the temperate zone of the earth. The Greater Yellowstone Ecosystem includes Yellowstone and Grand Teton National Parks, seven national forests, three federal wildlife refuges, BLM lands, and private lands that occupy 10-15 percent of the 20-million-acre area. Our definition of ecosystem management is that which maintains the integrity, energy flow, trophic structure, biodiversity of species, and material flows of ecosystems.

The poor public understanding of the ecosystem concept, plus misinformation floated mostly by industry, were largely responsible for failure of the Greater Yellowstone Vision. The agencies, which have limited incentive to work together, did little to enlighten the public. Data quality and exchange have been a problem.

Our accomplishments include the Greater Yellowstone Tomorrow Project, a community effort to develop statements and understanding of shared goals among the communities. The Greater Yellowstone Profile document explains how the ecosystem functions. A 250-page blueprint is a GIS compilation of standards and guidelines. We pursue legislation including reauthorization of the Endangered Species Act, wilderness legislation, reform of the 1872 Mining Law, and consolidation of the Gallatin Forest in federal ownership. We facilitated negotiation between the state and federal governments to resolve water rights and prevent drilling that would alter Yellowstone's geothermal features. We successfully litigated the Targhee National Forest to stop overcutting.

I conclude that there are four challenges. (1) The agencies must assume leadership in ecosystem management. (2) The agencies must assume leadership in educating the public, pointing out the errors in misinformation. (3) The agencies must unify the commitment to EM within their own organizations. (4) There is a need for a new legal framework, including a monitoring mandate.

INTRODUCTION

I appreciate the invitation to be here today. I appreciate Susan's earlier invitation to be the rubber part of this conference—it's true that I spend a lot of my time on the road so it's a fitting metaphor. I don't have any slides so I am going to ask you for starters to close your eyes and picture Yellowstone in your mind. The geysers of Yellowstone. The elk herd migrating outside of the Park in fall to the north on the Yellowstone River. The antelope. The bison, now about 2,500 in number, centering around Yellowstone Park but migrating outside of the boundaries.

None of these animals understand or particularly care about the boundaries of the ecosystem which totals about 20 million acres in size, a slightly different figure from what some of the agencies are using these days. The problems of determining ecosystem boundaries, whether it's the wildlife migrating outside of the park boundaries or the geothermal resources which have hot-water aquifers extending far outside the boundaries, have created an enormous complex of issues and problems which we, as Susan indicated, started

about ten years ago to address. I'd like to spend a few minutes talking a bit about our evolution—tell a few stories about what we've tried and what's failed, and what's worked—tying into some of the themes we've discussed this morning. And I wouldn't be doing my job if I didn't also include a critique of what some of the agencies have been doing and trying in the Greater Yellowstone. I will sum up with four challenges to the resource managers or the would-be resource managers in this room.

THE GREATER YELLOWSTONE COALITION

By way of introducing ourselves, I can't begin this discussion without recognizing one of our parents and mentors of the Greater Yellowstone Coalition, Rick Reese, who happens to be in the room with us today and without whom we probably never would have gotten off the ground. We are now a coalition of about 100 conservation groups which include regional, local, and national groups. We also have 5,000 individual members, about half of whom live within the three-state region of Wyoming, Idaho, and Montana.

¹Editorial note: This paper is a transcription, slightly edited, from the recording of Louisa Wilcox's presentation.

We were created in response to growing threats perceived in the early 1980s, but they had been going on for quite a while. The growing threats ringing the Greater Yellowstone region include oil and gas leasing, development pressures to the east, a lot of clear-cutting concentrated on certain national forests: the Targhee, which I will talk about a little later, the Gallatin, the Bridger-Teton, and portions of the Shoshone.

There are hard-rock mining threats to the north, particularly in Montana with the new platinum mine, and a new gold mine being developed within three miles of Yellowstone Park. There are geothermal threats. Some are to the west of Yellowstone National Park in Island Park, Idaho, where there is a considerable amount of commercial interest in developing that area. There are more recent threats near Gardiner, Montana, north of the Park's boundary, where there's been an interest in geothermal development on the part of a religious cult, the Church Universal and Triumphant from California.

We have threats of all kinds—water-development threats, different kinds of dams and diversion projects—on the way. There is almost no problem that we don't have, some arising in a serious way since the Coalition began.

The one of particular concern is the one that Jack just mentioned in his talk: private land development and subdivision. There is an enormous amount of pressure in the 20 counties surrounding Yellowstone to develop the private lands which are often critically important in the ecosystem. The river-bottom country and the winter range are small in acreage, but are vitally important to the ecosystem. If we lost them to development, a lot of the ecosystem function and even some of the species would not be able to survive. So we developed in response to all these threats.

We also developed in response to what we perceived as agency inertia. The agencies were not taking the lead, were not picking up the ball and doing something about protecting one of the last remaining ecosystems in the temperate zones of the earth and in the United States that could be considered more or less intact. It is one of the larger areas that functions more or less naturally. The agencies in the early 1980s were not doing much to address some of the critically pressing issues.

Of course the jurisdictional problems are very difficult, as discussed by Professor Coggins and others throughout the day. There are two national parks at the core, Yellowstone and Grand Teton, surrounded by seven national forests answering to three different Forest Service regions. There are three wildlife refuges answering to the Fish and Wildlife Service. There is BLM land scattered around the lower-elevation areas in the three states, on and on and on. There is a very complicated land pattern in the area that makes collaboration, joint problem solving, and intelligent management very difficult.

We are a conservation community, however, and we are concerned. Many of us live in the communities. Many of our board members live in the communities. Many of our member groups and members live in the communities. We are concerned about the future of these communities and their sustainability. I will be getting deeper into some of these related issues and I will talk more about them later.

THE GREATER YELLOWSTONE ECOSYSTEM

The idea of an ecosystem, and Greater Yellowstone as an ecosystem, has been around for a long time. Frank and John Craighead coined the term Greater Yellowstone Ecosystem to describe bear habitat areas which the grizzly bears were using. Much of this lay far outside the boundaries of Yellowstone Park as early as the 1960s. Since then the term, and our understanding and use of it, has expanded to include watersheds, to include many other species, and to include ecological processes. When you mention that word in Yellowstone, you may recall the fires of 1988 in terms of large-scale, natural processes that are important to the functioning of Greater Yellowstone.

Everyone else has offered a definition of ecosystem management, so I will weigh in too. I like Professor Coggin's term and I'm a little concerned that it may indeed resolve into what managers do. We may call it ecosystem management but it may be something quite different from what we in the Coalition mean by it. Our term includes that which maintains the integrity of ecosystems, their energy flow, their trophic structure, biodiversity of species, and their material cycles.

Ecosystem management is not, in our view, what Montana Senator Conrad Burns referred to a few weeks ago. Senator Burns was using ecosystem management and the need for ecosystem management as an excuse not to designate any more wilderness acreage in Montana, and as an excuse to put every acre into commodity production. If for some reason, like the presence of an endangered species, you can't do commodity production on a certain number of the acres, then you should certainly try to make it up elsewhere.

That is not what we mean by ecosystem management. But we need to be aware that this term is being used for all kinds of ends which I don't think the biological, the academic community, Jack Ward Thomas, or other people mean. It is being misused and I think that's an issue which the managers are going to have to address if the term is to have meaning in the long term.

We've run into many problems that were itemized very clearly this morning. There are many disincentives to managing this area of Greater Yellowstone as a functioning area. The first begins with defining it and defining the boundaries. We were asked early on, from folks in Logan actually, to include the Greater Yellowstone down to at least Logan Canyon. So there was a lot of discussion about where the boundaries of the Greater Yellowstone should be. We did not do that, by the way. We're still only in three states although people accuse us of wanting to extend all the way to Tierra del Fuego. In fact, with certain migratory birds, where do you stop? It's a hard question.

But for the sake of convenience, as I said, we use a 20-million-acre area. About 10 to 15 percent of that is private land in the lower-elevation areas that are critically important to sustaining Yellowstone as an ecosystem. Defining the perimeters is a very difficult problem and we've relied heavily on science. We have a Science Advisory Council which includes a number of academics, one of whom, Barrie Gilbert, is down here. A number of academics in the community around Yellowstone help us sort through various problems.

We made a decision of convenience, recognizing that we didn't need every acre with all the migratory bird species. It is a large area of natural ground, more or less centered around the two parks, which contributes what is necessary to maintain natural processes such as fire, minimum viable populations of native flora and fauna, and well-distributed native habitats, the vegetational components. So we tried to be somewhat systematic in how we defined it, and recognize that it's not perfect. It will always be open to debate, further discussion, and refinement. And that's fine. It's just that we had to have a piece of ground on which to work.

LOTS OF PROBLEMS

The public understanding of ecosystem is still relatively low, and I still get phone calls from places like Afton, Wyoming, periodically. "I don't like this idea of Greater Yellowstone Ecosystem." I said, "Well, you know it sort of exists. It's out there. It's a concept. It's not a matter that we invented it to shut out all sorts of commodity production, something we are constantly accused of doing." And so there is not a very good public understanding. Ecosystem is still a mysterious term. It seems suspicious to people who are not fully aware of its meaning.

And I think this was really the reason that the first attempt at working on a joint vision, primarily between the Forest Service and the Park Service, called the Greater Yellowstone Vision, failed. The public didn't understand what it was and really didn't much want it. We were supporting it. It was certainly a step forward to define a philosophy, a way of looking at Greater Yellowstone, and estimating its values and working to sustain them. It was a first step in what could have been a policy developed toward protecting and conserving Greater Yellowstone, and the communities surrounding it, as an ecosystem.

But not only was there a great deal of misinformation floating around, mostly from industry, but there was so little work done to educate the public about what it really was, why it was important, and what it wasn't. There developed such a level of controversy that the White House asked the Forest Service and the Park Service to back off, and you all know the story of the regional Park Service director and a regional forester losing their jobs over this.

It was highly controversial. But the real issue was, a huge amount of misinformation about Greater Yellowstone being a lock-up of resources, and the agencies which had the most at stake and the most to lose were not out there in the communities saying, "This is what it is. It's really not that scary. We're not expanding the boundaries of Yellowstone to include Laramie, Wyoming. We are basically trying to provide a broader vision within the existing land-management frameworks that we all have, and the goals and the legislation that we all have. The purpose is to provide for more intelligent management so your grandkids have geysers to look at, and elk to hunt, and fish in the rivers, and the like."

It was a very simple and benign effort. And critical to its success is public education. Bret made this point earlier. And the agencies have to take the lead in explaining it and in

selling it. They have to take a lead in having a public dialogue on it or it won't happen, and it won't happen because the public won't understand it. They won't accept it. Just like they didn't understand and didn't accept the Greater Yellowstone Vision document about four years ago.

Another problem that we face is that there are no public incentives. For a good business owner in Ennis, Montana, who is trying to do the right thing and act in an environmentally benign way, there really aren't any good economic incentives. This is true both for the business people and other community members who want to behave responsibly. And there ought to be some things that we can do about that.

The transboundary legal issues are serious. Professor Coggins referred to them earlier but we visit them every day. And I will give you an example. Yellowstone was established in 1872 primarily to protect the geysers. The monument of Yellowstone Park was really the geysers and no one understood then the extent to which the hot-water aquifer extended far outside the boundaries to the north and to the west, and there was no legal framework. There was no legal structure to prevent underground hot-water pumping outside the boundaries of the park even if that meant screwing up the plumbing system of the geysers inside the park. The transboundary issue and the legal system simply didn't address that problem.

There are also very few administrative incentives to do ecosystem management. That hopefully is changing with the new chief of the Forest Service, Jack Ward Thomas. But after sitting in the room as I have over the last eight and half years in meetings of the Greater Yellowstone Coordinating Committee with the agencies, primarily Forest Service and Park Service, it is clear to me that there is very limited incentive for them to work together. There is still a tremendous amount of competition, jealousy, friction, and all the rest occurring despite the veneer of cooperation. That creates real problems in terms of getting together and working on some of these very severe problems. The administrative incentives in Greater Yellowstone were very much dampened after the demise of the Vision document. To quote Yellowstone Park superintendent, Bob Barbie, "Louisa, adventurism is not rewarded."

So the idea that the Park Service would step outside the boundary of Yellowstone Park to work on the issue of its bison migrating outside and down the Yellowstone River Valley where the state of Montana was in a complete uproar because it didn't want them and were trying to shoot them, was not on their agenda. The idea that the agency would go outside its boundaries and willingly negotiate and deal with the ranching community, the state of Montana, and private land owners was foreign to them even though these were Park animals. It was an enormous issue that needed to be addressed. So adventurism is not rewarded and I think that largely still stands even though we are hearing some different signals from the top levels.

Data quality and exchange have also been a real problem. This has been especially true of transboundary data. If you look at any of the maps that were assembled at the time the Greater Yellowstone Vision document came out, you will see large data holes—inside Yellowstone Park, or on particular forests, or on elk migration routes stopping at forest bor-

ing the law. This is something that Jack Ward Thomas has also said is important.

We pursue legislation. The Clarks Fork Wild and Scenic River was the product of a campaign that we ran for number of years with a number of other groups. We've been working on wilderness legislation and on reauthorization of the Endangered Species Act. We are also working to reform one of the laws that is perhaps the worst enemy of ecosystem management, and that is the 1872 Mining Law. The agencies have no authority to say no, no matter how bad a mine is. There's one mine right on the border of Yellowstone Park which we are trying to stop, and one of the reasons that it has a likelihood of going forward is because the 1872 Mining Law is still extant. It might have been relevant in 1872, but it's certainly not relevant now. It's a real problem for the agencies trying to manage on this broader landscape level.

We have had a number of conservation biologists, landscape ecologists, and other scientists look at our blueprint document. There are a number of these kinds of people on our science council. We took a hard look and asked what Yellowstone would look like if we provided for viability of native flora and fauna, endangered species, sensitive species that might get that way, and if we provided for a well-distributed series of plant communities throughout the landscape. We took into account that human activities have been changing the landscape. We specified that this system would have to be large enough, with the right distribution of habitats, watersheds, etc., to encompass large natural disturbances like the Yellowstone fires and beetle kills. We asked this question of everybody, including the science types, of what Yellowstone would look like on a large landscape level if we provided for all these elements.

And the answer was: a lot more wilderness. In fact the former president of the Society for Conservation Biology, Peter Brussard, who used to be at Montana State University, said incorporate every acre of roadless country you can get because we have so many encroachments on the outside and all of the recreational-use problems in Yellowstone Park. That amounts to 3.6 million acres of additional wilderness on BLM and forest land, and about 2.1 million acres on national park land in Yellowstone and Grand Teton.

Our advisors also recommend that we need to stop thinking of Yellowstone as an ecosystem in isolation, but really look hard at the ways of connecting Yellowstone into other adjacent ecosystems. In this case, our closest neighbor is the Central Idaho Wilderness Complex. So, with help from agency people and others, we started looking hard and mapping some possible linkages. That adds up to—and it doesn't have to be all wilderness designation but will include linkages for wolves and other animals—about 1.39 million acres. I know these sound like scary numbers but when you look at how isolated and how fragmented Yellowstone already is and you ask the question, these are the answers you get. In addition, consideration needs to be given to a lot more miles of protected river, whether it's through cooperative protection systems locally, or whether it's through what was done recently on the Henry's Fork, a state-protected river.

You wind up having to restore huge amounts of acreage that have been clear cut and roaded such as on the Targhee

National Forest. You wind up having to make wildlife refuges into functional refuges instead of little postage stamps in the middle of a sea of other things happening around it. You wind up—and this was really a critical thing that we concluded because we don't know enough about managing these resources—understanding that it is high time for an independent scientific review capability to advise the agencies on an ongoing basis as to what needs to happen in the way of new studies and the implications of those studies. An ongoing independent scientific voice is critical to face the challenges ahead, and to close the science-policy gap between science generated by universities and science produced by managing agencies. We really need an outside voice to come in and take a hard look.

SOME CASE STUDIES

I would like to focus now on a couple of case studies that are examples of different tools being used, some of which were referred to this morning. The first tool is legislation, pretty straight forward. You can go to Congress and ask for a position on something. In this case I will talk a little about the change in land jurisdiction.

Somebody talked this morning about the problem of checker-board railroad sections. We had the largest roadless area in the northern part of Greater Yellowstone in the Gallatin Forest, riddled with checker boards from the old railroad days. A huge problem. The Forest Service couldn't manage it, and it went from Plum Creek's hands, which was a subsidiary of Pacific Northern to a real bad type of developer out of Oregon. So we were very nervous about what the prospects were for the Gallatin staying roadless, and we and the Forest Service worked very hard.

Actually, I don't think the Forest Service could have done this alone because the politics involved were very shifty. This developer was very resourceful, and every time we thought we had the problem solved he would pursue a different strategy.

But we finally got a bill passed through Congress that consolidates the Gallatin Range in federal ownership. That will make life a lot easier, not just for the Forest Service, but it will make it possible to manage this area as a contiguous roadless block which it pretty much is now. So it's a huge step forward. Yes, it was a congressional fix, but it addressed an underlying problem. It was a real disincentive to managing this area as an ecosystem as long as those private-end holdings were there.

And it was no small matter. It was 80,000 acres, and we had to do a land exchange and a purchase. It got very complicated and it took our staff almost full time for nearly a year to get it done. But it was a critical turning point.

Another case study refers back to the same tool that Jack Stanford used in the Glacier Park Compact situation. This was a negotiation process between the state and federal government to resolve water rights, in this case Yellowstone's 1872 water right. We used an existing tool that wasn't designed for dealing with Yellowstone's geothermal resources and adapted it to deal with the threat of development

to the north. The development includes not only the Church Universal and Triumphant, who were trying to pump and develop the whole greenhouse spa thing just outside the Park, but also pumping that was occurring in the area as a result of this huge explosion of private land development.

The proposed pumping posed a certain degree of threat, according to the experts. If you pump enough cold or warm water out of the same area, you could be upsetting the plumbing system inside the Park by changing the hydrologic balance of the area. This hot-water system goes for miles outside the Park because people hit it once in a while drilling for domestic wells. It has been ratified by the state legislature and signed by Secretary Babbitt. So it's a huge problem, a huge level of uncertainty. It raises the question of what do you do in the face of not knowing much about how the geyser system really works.

So we used this negotiation process to bring everybody to the table. Even the Church Universal went along with it. We still have to get a congressional fix on their problem, but we used it to bring everybody to the table.

What we got was a scientifically drawn zone of geothermal concern. It took a while because we had to bring in academics, the state agencies, the feds, and everybody else. We have also used it to include a scientific voice on any well proposals that come up, domestic, hot, cold, or otherwise. The state does not necessarily have to listen to it. That was something that we couldn't get the legislature to buy. But the scientific community nonetheless has a voice in the permitting process for domestic wells. And that's going to be critical because if you start seeing temperature or chemical changes, you could be doing something at least to the Mammoth Terraces if not further into the Park.

So an ongoing scientific voice and adjudication of Yellowstone Park's water rights have satisfied Park officials that its interests have been cared for and its water rights protected. We supported that, and everybody supported it. Everybody felt good about that, and we used an existing tool that wasn't meant for this purpose but adapted it to deal with one of the problems.

The third case study I will mention is litigation. Litigation can be an important tool, and I will talk about it in relation to the Targhee National Forest. In this case, the Forest Service wisely used a lawsuit that we filed on endangered species to turn an important corner on this forest. It should have been done a long time ago.

Let me paint a little picture for you. This was a forest where a decision had been made about 20 years ago to harvest unsustainably, to depart from sustainability because a lot of acres on this forest had been killed by beetles. It was true. There had been a huge beetle epidemic.

The situation got out of hand because the Forest Service couldn't stop it. The politics sort of took over. They had been into the program for about 10-15 years, and it was clearly time to stop. But the pressures from the mills, the senators from Idaho, the Forest Service, and just about everybody else were such that the Forest Service couldn't stop. They couldn't tell Senator McClure, "No we're not going to do this anymore." Senator McClure wouldn't take that for an answer, and then Senator Craig also wouldn't take it for an answer.

So they kept overcutting, and they started cutting all of the leave strips, and they created on Yellowstone Park's west side eight miles of clearcut right up to the Park boundary. That's the one you can see from the moon. It's a real embarrassment to the agency. And what went along with that clear cutting was a road-building program that didn't have any standards or sideboards because its forest plan was an old plan. It didn't use the science that is available to forests now on the importance of regulating roads and road density. So it became the only forest in occupied grizzly bear habitat in the lower 48 states, with no, count them, zero, road standards. And they had upwards of six miles of road per square mile. It was a mess and they lost their grizzly bears. It was part of the occupied grizzly bear zone and since about 1983 or 1984 there have been no females with cubs sighted on the two bear-management units in that part of the Targhee. And they were the units that had bears. For the other units, there was a clear correlation between the road building and clear-cutting program and the fact that they did not have bears anymore. And despite all this, the Forest Service did not change course.

The conservation community first initiated a series of discussions with the past forest supervisor. I've become personal friends with some of the local loggers who also realized that the program was unsustainable, and the longer the agency kept overcutting with big clear cuts, the less prospect these people had of any kind of future. They could see the writing on the wall. As the leave strips went down, they knew that they didn't have much prospect unless something stopped. One old time logger, who must have been 80 years old, told me, "You got to get those guys because you know our future is tied to that too."

So we went to the Forest Service and we tried to negotiate this situation, a series of closures and moratoria on the most intensively cut area. We had at one point agreement between the Fish and Wildlife Service, Idaho Fish and Game, the conservation community, and the small, independent loggers who numbered about 250. But the bigger user groups had a few people in the room representing their interests on what should be done. And somehow the psychology changed. All those agencies, the conservation community, and the Forest Service eventually said no.

I was shocked. As we left that room I commented, "You know, we're going to have to litigate this." There was a clear violation of the Endangered Species Act. They were the only forests without any road standards. All of the other forests in grizzly bear area have road standards.

We filed a lawsuit last summer. What came out was some critical information. Despite a Forest Service commitment to leave 50 percent cover in this one area west of Yellowstone Park, they were down to 20 percent. They couldn't log in that area anymore for about 11 years until they got enough regeneration and growth to provide cover for other big game. They also made a huge change in the way the elk migrated out of the Park and got a blood bath on the way down to their winter range at the sand dunes in Idaho. So they basically were way over the cover constraints they should have left.

We suspected that they never would have taken a step back. We talked about cumulative effects and the importance

of looking at cumulative effects in the basic data. And they replied "Where are we? Have we overcut?" And they had. They were finally forced to step back because of our lawsuit.

I have to credit a couple things. One is our lawsuit that made everybody look. I also credit the leadership of the new forest supervisor, Bill Lavere, who was only acting at the time. He took one look and said, "You know, it's not here." And we replied, "Yeah, that's what we've been telling you. It's not here and we shouldn't be cutting what's left." He was the one who settled the lawsuit with us by implementing road standards that make the most sense, biologically, and stopping the cutting. He has really gone the distance on this issue.

But it is a real tragedy. The Forest Service would have kept overcutting until somebody took them to task. And there were so many people on the inside of the Forest Service who knew it was wrong but couldn't change the basic dynamic of what was happening. So I would argue that litigation has a role in terms of accountability. Maybe we will not have to do this as much anymore since Jack Ward Thomas has made a big point about obeying the law.

We have also developed a group with the small loggers to try to find other things including road closures, stewardship contracts, and small thinning projects to help them. We are trying to be sensitive to the impact this is having on some of the small independents. We have had pretty good luck at least identifying some potential areas, fighting hard to break up some big sales, and trying to encourage reserve sales for small operations. Last summer we created a task force, the Targhee Timber Task Force. I and this one small logger are on it. The Forest Service didn't want me to play a role. I was sort of the wrong age, the wrong sex, the wrong religion, and I was from Montana not Idaho. So I had all strikes against me.

But they were desperate and we wanted to be helpful to them. We identified some areas that were non-environmental issues. One was how the contracts were structured. It was a problem for them and we've been working on trying to help resolve this through appropriations for service-group contracts. So we're trying to be part of that solution even though it is my forester friend who needs a break. This is a forest that cannot take a lot of cutting and a whole lot of roads have to be closed, not only for grizzly bears, but indeed as a measure of the ecological health of the area.

CONCLUSIONS: THE FOUR CHALLENGES

Ecosystem management isn't going to last unless the agencies here and elsewhere make it meaningful. There are a number of people, not only from the conservation community but elsewhere, who are concerned that it's just another euphemism, just another term for clear cutting. It will become a new prospectus before too long, and four things need to happen. The first challenge is for the agencies to take some major areas of land where there are real natural-resources issues. They have to take the leadership in trying to resolve these in the interests of protecting the resources and of protecting sustainability in the communities. The faith in ecosystem management as a solution will not last unless the agencies do something meaningful.

Secondly, the agencies also must explain to the public why this is important and why it must be done. If they don't, as I indicated before, it will fail because the public doesn't understand what this is all about. The public will not accept it unless there's some clear and pressing reason, like impinging upon their fisheries opportunities, or clean water. It will fail utterly unless the agencies do something that they haven't done particularly well in my history in Greater Yellowstone, which is communicate to a broader array of publics than they have communicated to in the past.

And when misinformation comes out, which it will, like Conrad Burn's crazy statement, the agencies should be on top of responding to that. The agencies need to correct the record and make it a term that the public can live with, otherwise it'll just become a term that will be reduced to basic nonsense. If the Conrad Burnses can use it as a way not to create another acre of wilderness, and as a way to emphasize commodity production, something is wrong. That's exactly what we need to get away from, and the agencies need to set the record straight. It may not put them in a popular position, but unless they do it their endeavors and objectives will be compromised.

As a third challenge, there's an uneven commitment between parts of the agencies, the Forest Service as an example, to ecosystem management. Somehow they need to resolve this. For every step forward the Targhee has taken, there have been people on the inside betraying the leadership in an effort to thwart the day that change had to come, that roads would be closed and clear cuts would be halted. They have to obey the law and tell the truth. I don't need to say any more, but litigation will be there if the agencies don't take seriously their mandate to obey laws like the Endangered Species Act, Clean Water Act, and the other laws that have something to do with protecting areas as ecosystems.

Fourth, I think we need a new legal framework. We had an interesting situation develop in Greater Yellowstone after a congressional oversight hearing in 1986 or fall of 1985. Congressman Seiberling and Congressman Vento were very interested in doing a federal legislative fix on Greater Yellowstone management. The agencies were driven to the Greater Yellowstone Vision document out of fear of Congress.

Professor Coggins really laid it out clearly. There isn't a legal framework to do all of what is needed in ecosystem management and there should be. So I think we need to get less afraid of legislation to provide a framework for making ecosystem protection a priority, for getting ahead of the endangered species situations by mandating protection of viable populations of native flora and fauna. The National Forest Management Act has a provision like that, but BLM doesn't have it nor does the Park Service and that's a problem. It would be useful to have a clearly mandated priority to protect ecosystem integrity. It would be useful to have a mandate that would close the policy-science gap by providing on-going outside peer review in an area that's very complex, that not a lot of people know much about, where there's a lot of uncertainty, and which changes continually. It would be useful to have an ongoing review and critique of what the scientists are saying should be done.

It would be useful to have a different kind of monitoring mandate. Monitoring is one thing the Forest Service and BLM do last, and so they don't learn from what they've done in the past. It would be useful to have a monitoring mandate because it would help with the budgeting process and get away from this annual budgeting-cycle problem. If there were a mandate for long-term monitoring, there would be hope for budgeting it. Under the current system we are stuck with the agency's annual budget process, and it is subject to the whim of whatever politics are going on at the moment.

It would be useful to have a mandate to provide incentives for planning and information transfer to local communities on private-land issues. It would be useful for promoting a community dialogue. We've proposed a commission on community sustainability just in Greater Yellowstone to provide information to local communities on how they can develop businesses that are economically sound, how they

can change tax structure, and all the rest.

But if we don't have a broader legal framework I can promise you that we will have crisis after crisis which is what we have experienced in Greater Yellowstone. The crisis of the fires produced better forest lands. Why did we have to go through that grief? The crisis of bison is producing a dialogue in planning on bison. The crisis of our grizzly bear litigation is producing some movement forward. Why do we have to be crisis-driven either by some outside event like the Yellowstone fires, or inside events like sometimes occur. I think unless there is a broader legal framework making ecosystem management and ecosystem protection a priority, it will be crisis after crisis under the existing legal framework.

I appreciate the opportunity to be here today and I know I have probably exhausted you, but if there are any questions I would be happy to answer them.